Workplace Surveillance at the World Trade Center Site



Bruce Bernard, M.D., M.P.H., Boris Lushniak, M.D., M.P.H.

Ken Martinez, CIH

CDC / NIOSH

Thanks to the
HETAB Industrial Hygiene and
Medical Sections,
the Branch Office, especially
Allison Tepper, Dawn Tharr, and DART

Occupational Surveillance at the World Trade Center Site

- Background:
 Setting the stage
- Illness/Health

- Injury
- Exposure



Within our work-group at NIOSH we asked: "How can we respond in a positive way to such a tragedy?"

HETAB's Initial Response 9/11

Pulled together potential Hazards, Risks, Recommendations specific to the WTC site

Topics ranged from dust, blood borne pathogens, unstable structures, injuries, heavy metals, CO, confined space, to heat stress



Emotional Environment Still "Search and Rescue"

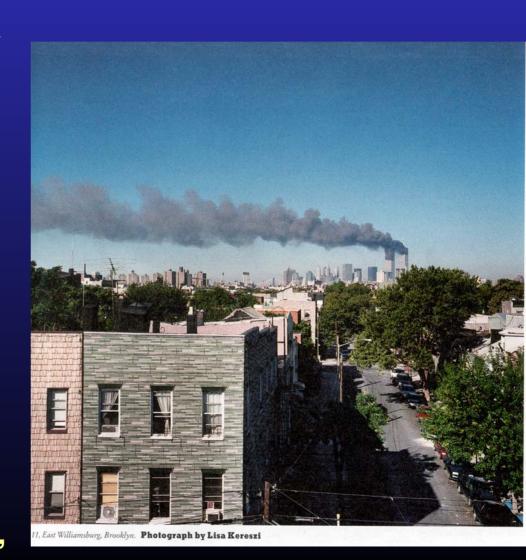
- Almost 5000 missing, not yet presumed to be deceased
- Workers determined to stay until all were rescued
- Health and Safety on the back burner





Multi-Organizational Environment!

- FEMA RULES!
- NY Office of Emergency Management (OEM)
- NYC Dept of Health
- NYC Dept Design Const
- NY OSHA
- NYPD, EOH
- NYFD
- USPHS, Army, National Guard
- EPA
- OSHA
- CDC
- Red Cross, etc., etc, etc,



A Political Environment!



Our Tasks at WTC Site

- Identify Occupational Health Problems
- Identify the Work Forces at WTC
- Identify Disease/Injury Trends
- Identify and Monitor Exposures
- Identify future Medical Surveillance Needs
- Disseminate info to decision-makers

Identify Occup. Problems

Week 2: Basic Occup Health and Safety: Still a concern

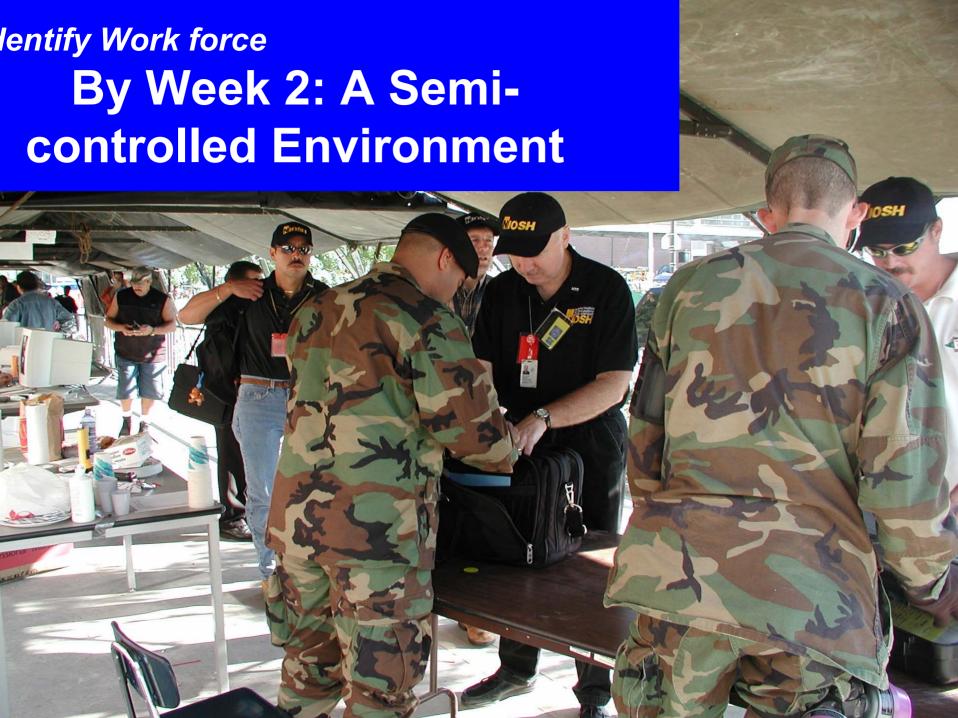
- PPE compliance
- Basic Safety
- Heavy Equipment, cranes overhead
- Hygiene
- Conflicting and competing issues



Week 2: Made Respirator Decisions

- Because of changing environment
- NIOSH Coordinated efforts among Agencies for Respirator use
- Developed a rationale for respirator selection
- Tried to influence NYC DOH, workers, about compliance





Red Tag: Admittance to the Site

A "Red Tag" restricted admittance to the controlled site starting 9/14:

Info collected: Name, SS#, affiliation, driver's license

Exempt: NYFD, NYPD



Established Ground Work for a Site-Worker Registry



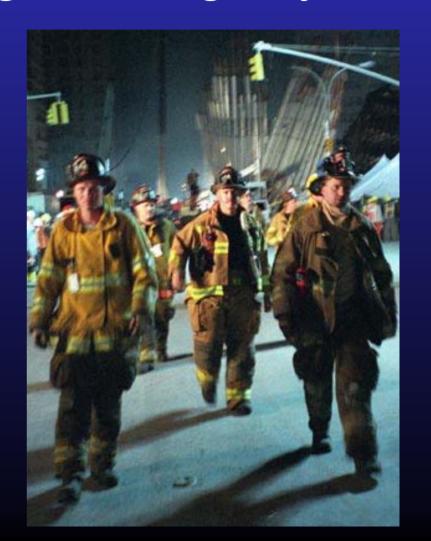
For NYC DOH, we physically tracked down information from myriad of working groups and met with NY City DOH, NY State Groups, NYFD, NYPD, FEMA, OEM, USPHS, Army, DMAT teams, Bechtel

NIOSH now has formal role in putting forward a registry of WTC site-workers

Identify Work force

Worked Specifically with FDNY concerning Firefighter Registry

- Encouraged the inclusion of specific variables
- Included questions concerning work stress and PTSS.
- Encouraging and providing support for quick turn around of information, as this is the heaviest exposed group at WTC



Worked with NYC Fire Department on Biological Monitoring

With CDC/NCEH lab, assisted NYFD on bio-monitoring based on exposure to the Rubble Pile

Obtained blood and urine for: PAHs, solvents, PCBs, dioxins, furans, metals



NIOSH Worked with Disaster Medical Teams, reviewed on-going injury surveillance



- Insured that DMATs prepared for on-site specific occupational health emergencies: H2S, CO
- Followed up injury records
- Provided NYC DOH information on specific occupational injuries, illnesses

Identify Exposures

Conducted Industrial Hygiene Monitoring

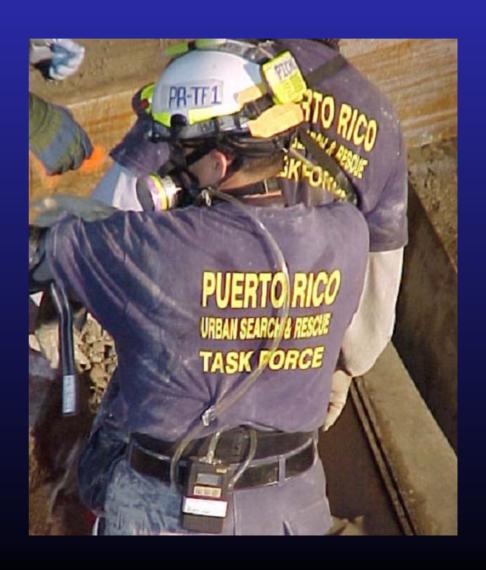
- Asbestos
- Silica
- Acid Gases
- Metals scan
- Mercury
- PAHs
- Organic Solvents



Identify Exposures

Conducted Industrial Hygiene Monitoring (2)

- Freon 22
- Respirable and total dust
- Bulk samples
- CO
- PCBs
- H₂S, HCN
- Diesel exhaust
- Thermal tubes







IH Sampling: Number Collected

Acid gases	39	Mercury	14
Asbestos (NIOSH)	61	Metals	53
Asbestos (C)	700	PAHs	12
Bulk Sample	36	Respirable Dust	23
Carbon Monoxide	57	Total dust	43
Silica	23	Thermal Tubes	12
Diesel	12	VOCs	92



Identify Exposures

Conducted Carbon Monoxide Monitoring and follow-up



- Welders and Cutters found to have high CO peaks
- Prevention: Industrial Hygiene measurements, Recommendations
 - Treatment: Worked with DMAT teams for monitoring workers exposed, instituted education to workers on CO, insured access to Carboxyhemoglobin levels

NIOSH's Industrial Hygiene Role

NIOSH HETAB Industrial Hygiene Section coordinated sampling results, then turned the task over to OSHA





Continuing work

Medical Surveillance Issues



We are working with NYC DOH, NYPD, NYFD, **State Occupational** Health Clinics, clinics in discussions concerning medical screening and surveillance issues of workers from the site

Current Activities

Many day-to-day occupational health activities are being now conducted by employers, unions, health care professionals, and institutions. Whether ongoing surveillance takes place will require vigilance on NIOSH's and NYCDOH's part.



WTC Cough, Other Respiratory Symptoms

- Physicians in NYC are reporting many cases of both upper respiratory and lower respiratory symptoms
- NIOSH trying to coordinate response with NY Occupational Health Clinic Network



